

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch
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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 99.28**WELDING INSPECTION REPORT****Resident Engineer:**Siegenthaler, Peter**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-019130**Date Inspected:** 05-Jan-2011**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1900**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC)**Location:** Shanghai, China**CWI Name:** Li Yang and Zhu Zhong Hai**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** OBG Trial Assembly**Summary of Items Observed:**

On this date Caltrans OSM Quality Assurance (QA) Inspector Mr. S. Manjunath Math was present during the time noted above for observations relative to the work being performed.

This QA Inspector randomly observed the following work in progress:

Orthotropic Box Girder (OBG) at Trial Assembly Areas

Segment 12BE to Segment 12CE (Root Gap and Offset)

This QA Inspector performed Dimension Control Inspection along with Caltrans QA Inspector Mr. Murugan Manikandan for measuring root gap and offset on at the Transverse Splice for the Segment 12BE to Segment 12CE between Panel Point (PP) 114 to PP 115 at the following locations:

Work Point E2 towards Work Point E1 (Edge Panel Bike Path Side).

Work Point E1 towards Work Point E3 (Side Panel Bike Path Side).

Work Point E3 towards Work Point E4 (Bottom Panel).

Work Point E4 towards Work Point E6 (Side Panel Cross Beam Side).

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Work Point E6 towards Work Point E5 (Edge Panel Cross Beam Side).

Work Point E5 towards Work Point E2 (Deck Panel).

The QA Inspector measured the root gap using 1(One) taper gauge and measured the offset using a bridge cam gauge.

The measurements were recorded in the Dimension Control Plan (DCP) on a separate form and submitted to the Lead Inspector and Engineer for review and disposition.

Segment 12BE to Segment 12CE (U-Rib to U-Rib)

This QA Inspector performed Dimension Control Inspection for measuring offset along with Caltrans QA Inspector Mr. Murugan Manikandan on the U-Rib to U-Rib from Cross Beam side towards Bike Path side at a total of 39 locations on Segment 12BE to Segment 12CE between Panel Points (PP) 114 to PP 115 at the following locations before welding i.e., tack weld condition:

The offset was measured within 50mm from the Deck Panel on U-Rib on the South and North side. The QA Inspector measured the Offset using 1(One) Meter Straight Edge.

The measurements were recorded in the Dimension Control Plan (DCP) on a separate form and submitted to the Lead Inspector and Engineer for review and disposition.

Traveler Rail at Bay # 4

This QA Inspector witnessed the final bolt tension verification on bolts connecting the Traveler Rail at Bay # 4. The QA Inspector verified the bolt tension for bolts connecting the Angle piece to Traveler Rail web on a random basis and the results appeared to be in general compliance. The Inspection was performed against Notification No. 00590.

The bolt sizes used were M16 x 75 RC Lot # DHGM160023 and the final torque value established was 190 N-m.

The Traveler Rails for which bolt tension verification performed on random basis are identified as below total 26 pieces.

Traveler Rail # 11TR1-025

Traveler Rail # 11TR5-007

Traveler Rail # 11TR6-002

Traveler Rail # 11TR7-002

Traveler Rail # 11TR1-014

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Traveler Rail # 11TR8-001

Traveler Rail # 11TR10-002

Traveler Rail # 11TR3-001

Traveler Rail # 11TR1-022

Traveler Rail # 11TR3-022

Traveler Rail # 11TR2-005

Traveler Rail # 11TR1-004

Traveler Rail # 11TR3-012

Traveler Rail # 11TR1-028

Traveler Rail # 11TR5-001

Traveler Rail # 11TR5-005

Traveler Rail # 11TR1-002

Traveler Rail # 11TR6-001

Traveler Rail # 11TR1-015

Traveler Rail # 11TR10-001

Traveler Rail # 11TR3-011

Traveler Rail # 11TR1-016

Traveler Rail # 11TR3-010

Traveler Rail # 11TR3-018

Traveler Rail # 11TR3-003

Traveler Rail # 11TR2-006

The Manual Torque wrench used was Serial No. XO2-776.

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Bike Path at Open Yard behind Bay # 15.

This QA Inspector performed Dimension Control Inspection on the Bike Path bottom plate for flatness check across the longitudinal butt weld. Flatness check was performed on following mentioned Bike Paths and Bike Path are identified as:

Bike Path identified as BK004A-001.

Bike Path identified as BK004A-021.

The QA Inspector measured the flatness using 600mm long straight edge across the Butt (CJP) weld.

Observed flatness measured out of the allowable tolerance.

The result of the inspection was informed to ZPMC QA Mr. Wang Lu and Caltrans Lead Inspector Mr. Mark Miller and Mr. Hiranch Patel.

Segment 12AW to Segment 12BW (Bottom Panel Transverse Splice weld)

This QA Inspector observed the repair welding by Shielded Metal Arc Welding (SMAW) process on a Complete Joint Penetration (CJP) groove weld. The Weld joint was designated as OBE12B-001. The welder identification was 046709 and 046704 and was observed welding in the 1G (Flat) position using approved Welding Procedure Specification WPS-345-SMAW-1G(1F)-FCM-Repair-1. The piece mark was identified as weld connecting Bottom Panel Transverse Splice.

Please reference the pictures attached for more comprehensive details.

Segment 12BE to Segment 12CE (Deck Panel Transverse Splice)

This QA Inspector observed the in-process welding by Flux Cored Arc Welding (FCAW) process on a Complete Joint Penetration (CJP) groove weld. The Weld joint was designated as OBE12A-003. The welder identification was 040456 and 040367 and was observed welding in the 1G (Flat) position using approved Welding Procedure Specification WPS-B-T-223(2)1T-ESAB. The piece mark was identified as the Deck Panel, transverse splice weld.

Please reference the pictures attached for more comprehensive details.

Segment 12BE to Segment 12CE (Deck Panel)

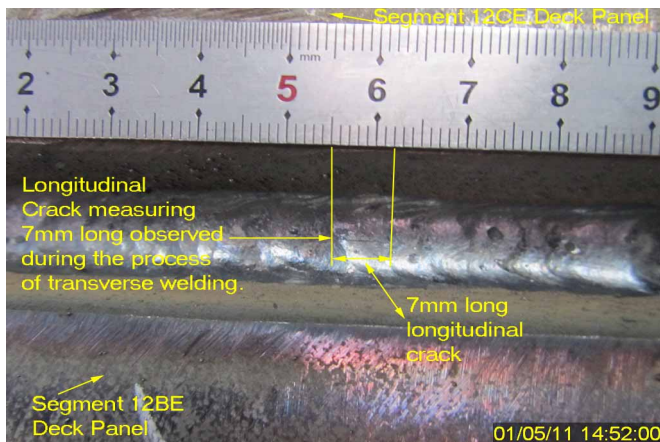
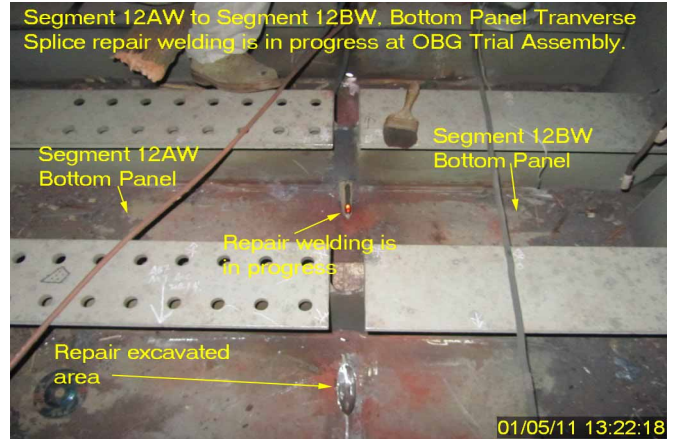
This QA Inspector at Segment 12BE to Segment 12CE observed longitudinal cracks during welding of Complete Joint Penetration (CJP) groove transverse splice at root run. The welding was performed with the Flux Cored Arc Welding (FCAW) process using ESAB E71T-1M Dual Shield70 Ultra Plus electrode with ceramic backing. Longitudinal Cracks was visually evident at Deck Panel, weld joint number identified as OBE12A-003.

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Please reference the pictures attached for more comprehensive details.

Unless otherwise noted, all work observed on this date appeared to generally comply with applicable contract documents.



Summary of Conversations:

No relevant conversations were reported on this date.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Eric Tsang 150000422372, who represents the Office of Structural Materials for your project.

Inspected By: Math,Manjunath

Quality Assurance Inspector

Reviewed By: Dsouza,Christopher

QA Reviewer